

II. In The Claims

Please amend the affected claims as set forth below. *Inter alia*, the amendments cancel claims 1-52, and add new claims 53-66, which new claims re-present elected claims 10-12, 14-17, 23, 24, 26, 28-30 and 37, with claims 10, 14 and 37 appropriately recast in independent form.

Claim 1 (Withdrawn). A melt-processible polymeric material comprising:
a major portion of an olefinic polymer component selected from at least one of polyalkylenes, copolymers of polyalkylenes, wherein at least one alkylene monomeric unit contains between 2 and 6 carbon atoms; and
a minor portion of a non-olefinic polymer component selected from at least one of thermoplastic polyamides, thermoplastic polyesters derived from ethylene glycol, thermoplastic polycarbonate and amorphous thermoplastic rubbers;
wherein the major portion and the minor portion are present in orientable alloyed relationship.

Claim 2 (Withdrawn). The melt processible polymeric material of claim 1 wherein the olefinic polymer component has a first melt flow index and the polymer component composing the minor portion has a second melt flow index, wherein the first melt flow index is lower than the second melt flow index.

Claim 3 (Withdrawn). The melt processible polymeric material of claim 1 wherein the olefinic polymer component is at least one of polypropylene and copolymers of polypropylene.

Claim 4 (Withdrawn). The melt processible polymeric material of claim 3 wherein the thermoplastic polyamide contains at least one of polyamide 6, polyamide 6,6, polyamide 11, polyamide 12.

Claim 5 (Withdrawn). The melt processible polymeric material of claim 3 wherein the thermoplastic polyester derived from ethylene glycol is at least one of polyethylene terephthalate, polybutylene terephthalate and polytetramethylene terephthalate.

Claim 6 (Withdrawn). The melt processible polymeric material of claim 3 wherein the at thermoplastic polycarbonate is at least one of straight chain polycarbonate and branched polycarbonate.

Claim 7 (Withdrawn). The melt processible polymeric material of claim 1 wherein the major portion of the olfenic polymer component is present in an amount between 40 and 95% by material weight and wherein the polymer of the minor portion is present in an amount between 10 and 35% by material weight.

Claim 8 (Withdrawn). The melt processible polymeric material of claim 7 wherein the olefinic polymer is present in an amount between 65 and 85% by material weight and wherein the polymer component of the minor portion is present in an amount between 15 and 30% by material weight.

Claim 9 (Withdrawn). The melt processible polymeric material of claim 6 wherein the melt processible material is granular or pelletized material and wherein the polymer of the minor portion is randomly dispersed within the major portion.

Please cancel claims 10-12.

Claim 13 (Withdrawn). A melt-processible polymeric material comprising:

a major portion of an olefinic polymer component selected from at least one of polyalkylenes, copolymers of polyalkylenes, wherein at least one alkylene monomeric unit contains between 2 and 6 carbon atoms, the olefinic polymer having a first melt flow index; and

a minor portion of a non-olefinic thermoplastic polymer component, the non-olefinic thermoplastic polymer having a second melt flow index and selected from the group consisting of thermoplastic polyamides, thermoplastic polyesters derived from ethylene glycol, and thermoplastic polycarbonates;

wherein the first melt flow index is lower than the second melt flow index.

Please cancel claims 14-17.

Claim 18 (Withdrawn). The melt processible polymeric material of claim 13 wherein the olefinic polymer is selected from at least one of polypropylene and copolymers of polypropylene.

Claim 19 (Withdrawn). The melt processible polymeric material of claim 18 wherein the non-olefinic thermplastic is a thermoplastic polyamide selected from at least one of polyamide 6, polyamide 6,6, polyamide 11 and polyamide 12.

Claim 20 (Withdrawn). The melt processible material of claim 18 wherein the thermoplastic polyester derived from ethylene glycol is at least one of polyethylene terephthalate and polytetramethylene terephthalate.

Claim 21 (Withdrawn). The melt processible polymeric material of claim 18 wherein the thermoplastic polycarbonate is at least one of straight chain polycarbonate and branched polycarbonate.

Claim 22 (Withdrawn). The melt processible polymeric material of claim 18 wherein the major portion of olefinic material is present in an amount between 40 and 95% by material weight and wherein the non-olefinic thermoplastic polymer of the minor portion is present in an amount between 10 and 35% by material weight.

Please cancel claims 23 and 24.

Claim 25 (Withdrawn). The molded work piece of claim 24 wherein the at least one non-olefinic polymer component is a thermoplastic polyamide from at least one of polyamide 6, polyamide 6,6, polyamide 11 and polyamide 12.

Please cancel claim 26.

Claim 27 (Withdrawn). The molded work piece of claim 24 wherein the at least one non-olefinic polymer compound is selected from at least one of linear polycarbonates and branched polycarbonates.

Please cancel claims 28-30.

Claim 31 (Withdrawn). A method for preparing a polymeric composition suitable for use in molding processes, the method comprising the steps of:

agitating an amount of a non-olefinic thermoplastic, the non-olefinic thermoplastic having a first elevated processing temperature, the agitation progressing for an interval and at an temprature sufficient to maintain the thermoplastic polyamide in an essentially molten state wherein the non-olefinic thermoplastic polycarbonates;

adding an amount of thermoplastic polyolefin to the agitating non-olefinic thermplastic, the amount of thermoplastic polyolefin added being greater than the amount of non-olefinic thermoplastic, wherein the polyolefin added is

maintained at a temperature below the first elevated temperature and results in a temperature decrease to a second temperature, the second temperature sufficient to maintain the added polyolefin in a molten state;

compounding molten non-olefinic thermoplastic and added thermoplastic polyolefin for an interval sufficient to accomplish random dispersion of discrete regions of non-olefinic thermoplastic in a thermoplastic polyolefin matrix; and cooling the molten dispersion to a temperature below which solidification of the resulting thermoplastic compound occurs.

Claim 32 (Withdrawn). The method of claim 31 wherein the thermoplastic polyolefin is selected from at least one of polyalkylenes, copolymers of polyalkylenes, wherein at least one alkylene monomeric unit contains between 2 and 6 carbon atoms.

Claim 33 (Withdrawn). The method of claim 32 wherein the thermoplastic polyolefin has a first melt flow index and the non-olefinic thermoplastic has a second melt flow index, the first melt flow index being lower than the second melt flow index.

Claim 34 (Withdrawn). The method of claim 31 wherein said compounding step is accomplished by contacting combined thermoplastic materials in a knead melting mechanism sufficient to provide at least one region of high shear kneading.

Claim 35 (Withdrawn). The method of claim 31 wherein the thermoplastic polyolefin is added as a fluidized solid in a weight to weight ratio of greater than 1:1, polyolefin to non-olefinic thermoplastic respectively.

Claim 36 (Withdrawn). The method of claim 35 wherein the thermoplastic polyolefin is added as a fluidized solid in a weight to weight ratio of greater than 2:1, polyolefin to non-olefinic thermoplastic respectively.

Please cancel claim 37

Claim 38 (Withdrawn). The method of claim 31 wherein the thermoplastic polyamide is fed to an compounding vessel having at least one non-olefinic thermoplastic introduction port, the non-olefinic thermoplastic being introduced through the at least one non-olefinic thermoplastic introduction port on an essentially continuous manner, and wherein the thermoplastic polyolefin is fed into the compounding vessel through a polyolefin introduction portion in an essentially continuous, the polyolefin introduction port being located downstream of the non-olefinic thermoplastic introduction port.

Claim 39 (Withdrawn). The method of claim 38 wherein the thermoplastic polyolefin is selected from at least one of polyalkylenes, copolymers of polyalkylenes, wherein at least one alkylene monomeric unit contains between 2 and 6 carbon atoms.

Claim 40 (Withdrawn). The method of claim 39 wherein the non-olefinic thermoplastic is a thermoplastic polyamide is selected from at least one of nylon 6, nylon 6,6, nylon 11, and nylon 12.

Claim 41 (Withdrawn). The method of claim 39 wherein the non-olefinic thermoplastic is a thermoplastic polyester derived from ethylene glycol and is selected from at least one of polybutylene terephthalate, polyethylene terephthalate and polytetramethylene terephthalate.

Claim 42 (Withdrawn). The method of claim 39 wherein the non-olefinic thermoplastic is a thermoplastic polycarbonate selected from at least one of linear polycarbonate and branched polycarbonates.

Claim 43 (Withdrawn). The method of claim 38 wherein the thermoplastic polyolefin is added as a fluidized solid in a weight to weight ratio of greater than 1:1, polyolefin to non-olefinic thermoplastic respectively.

Claim 44 (Withdrawn). The method of claim 43 wherein the thermoplastic polyolefin is added as a fluidized solid in a weight to weight ratio of greater than 2:1, polyolefin to non-olefinic thermoplastic respectively.

Claim 45 (Withdrawn). A method for preparing a polymeric composition suitable for use in injection molding processes, the method comprising the steps of:

agitating an amount of a non-olefinic thermoplastic selected from at least one of thermoplastic polyamides, thermoplastic polyesters derived from ethylene glycol and thermoplastic polycarbonates at a first elevated processing temperature, the agitation progressing for an interval and at a temperature sufficient to maintain the thermoplastic polyamide in an essentially molten state;

adding an amount of thermoplastic polyolefin to the agitating non-olefinic thermoplastic, the amount of thermoplastic polyolefin added being greater than the amount of agitating non-olefinic thermoplastic, wherein the added polyolefin is maintained at a temperature below the first elevated temperature and induces in composition temperature decrease to a second temperature, the second temperature sufficient to maintain the added polyolefin in a molten state;

compounding molten non-olefinic thermoplastic and added thermoplastic polyolefin for an interval sufficient to accomplish random dispersion of discrete regions of thermoplastic non-olefinic thermoplastic in a thermoplastic polyolefin matrix; and

cooling the molten dispersion to a temperature below which solidification occurs.

Claim 46 (Withdrawn). The method of claim 45 wherein the thermoplastic polyolefin is selected from at least one of polyalkylenes, copolymers of polyalkylenes, wherein at least one alkylene monomeric unit contains between 2 and 8 carbon atoms.

Claim 47 (Withdrawn). The method of claim 45 wherein the thermoplastic polyolefin is selected from at least one of polypropylene and copolymers of polypropylene.

Claim 48 (Withdrawn). The method of claim 45 wherein the random dispersion of discrete regions of non-olefinic thermoplastic in a thermoplastic polyolefin matrix is characterized by an olefinic matrix which comprises between 40 and 85% by total material weight and a non-olefinic portion which comprises between 10 and 35% by material weight.

Claim 49 (Withdrawn). The method of claim 45 wherein said compounding step is accomplished by contacting combined thermoplastic materials with a twin screw blade having a rotation and orientation sufficient to provide at least one region of high shear.

Claim 50 (Withdrawn). The method of claim 49 wherein the thermoplastic polyolefin has a first melt flow index and the non-olefinic thermoplastic has a second melt flow index, the first melt flow index being lower than the second melt flow index.

Claim 51 (Withdrawn). The method of claim 49 wherein the thermoplastic polyolefin is added as a fluidized solid in a weight to weight ratio of greater than 1:1, polyolefin to non-olefinic thermoplastic respectively.

Claim 52 (Withdrawn). The method of claim 44 wherein the thermoplastic polyolefin is added as a fluidized solid in a weight to weight ratio of greater than 2:1, polyolefin to non-olefinic thermoplastic respectively.

Claim 53 (New). A melt-processible polymeric material comprising:

A major portion of an olefinic polymer component selected from the group consisting of polyalkylenes, copolymers of polyalkylenes, and mixtures thereof, the olefinic polymer component further characterized in that at least one alkylene monomer thereof contains from 2 to 6 carbon atoms;

A minor portion of a non-olefinic polymer component selected from the group consisting of thermoplastic polyamides, thermoplastic polyesters derived from ethylene glycol, thermoplastic polycarbonate, amorphous thermoplastic rubbers, and mixtures thereof;

Wherein the major portion and the minor portion are present in orientable alloyed relationship; and

Further comprising at least one primary migratory compatibilizer present in an amount sufficient to promote orientational positioning of the major olefinic polymer portion relative to the minor non-olefinic polymer portion upon application of an orientational inducement force.

Claim 54 (New). The melt processible polymeric material of claim 53, wherein the at least one primary migratory compatibilizer is a material capable of promoting bonding at interfacial locations between the non-olefinic and the olefinic polymer.

Claim 55 (New). The melt processible polymeric material of claim 53, wherein the at least one primary migratory compatibilizer is a siloxane oil.

Claim 56 (New). A melt-processible polymeric material comprising:

A major portion of an olefinic polymer component selected from the group consisting of polyalkylenes, copolymers of polyalkylenes, and mixtures thereof, the olefinic polymer component further characterized in that at least one alkylene monomer thereof contains from 2 to 6 carbon atoms, the olefinic polymer having a first melt flow index;

A minor portion of a non-olefinic thermoplastic polymer component, the non-olefinic thermoplastic polymer component having a second melt-flow index and selected from the group consisting of thermoplastic polyamides, thermoplastic polyesters derived from ethylene glycol, thermoplastic polycarbonates, and mixtures thereof;

Wherein the first melt flow index is lower than the second melt flow index; and
Further comprising at least one compatibilizer present in an amount sufficient to promote orientational positioning of the non-olefinic thermoplastic polymer relative to the olefinic polymer upon application of an orientational inducement force.

Claim 57 (New). The melt processible polymeric material of claim 56, wherein the at least one compatibilizer is a material capable of promoting bonding at interfacial locations between the olefinic polymer and non-olefinic thermoplastic polymer.

Claim 58 (New). The melt processible polymeric material of claim 56, further comprising at least a second compatibilizer present in an amount sufficient to promote orientational positioning of the olefinic polymer of the major portion relative to the non-olefinic thermoplastic polymer of the minor portion upon application of an orientational inducement force.

Claim 59 (New). The melt processible polymeric material of claim 56, further comprising at least a second compatibilizer, the at least second compatibilizer present in an amount below that required to provide effective functionalization for the polymeric components, the second migratory compatibilizer selected from the group consisting of maleic anhydride, copolymers of maleic anhydride and olefinic compounds having monomeric units of at least 2 to 6 carbon atoms, maleic anhydride rubbers, and mixtures thereof.

Claim 60 (New). A molded workpiece having at least one outwardly oriented surface and an interior region, the molded workpiece composed of a thermoplastic material, the thermoplastic material comprising:

an olefinic polymer component selected from the group consisting of polyalkylenes, copolymers of polyalkylenes, and mixtures thereof, the olefinic polymer component further characterized in that at least one alkylene monomer thereof contains from 2 to 6 carbon atoms; and

at least one non-olefinic polymer component, the non-olefinic polymer component selected from the group consisting of polyamides, polycarbonates, polyesters derived from ethylene glycol, amorphous thermoplastic rubbers, and mixtures thereof; and

at least one compatibilizing agent;
wherein the at least one non-olefinic polymer component is present at elevated concentrations relative to the olefinic polymer component at a region proximate to the outwardly oriented surface of the workpiece and the olefinic polymer component is present in concentrations relative to the non-olefinic polymer component in the interior region of the workpiece and wherein the at least one compatibilizing agent is present at interfacial regions between the non-olefinic polymer component and the olefinic polymer component.

Claim 61 (New). The molded workpiece of claim 60, wherein the olefinic polymer component is selected from the group consisting of polypropylene, copolymers of polypropylene, and mixtures thereof.

Claim 62 (New). The molded workpiece of claim 61 wherein the thermoplastic polyester is selected from the group consisting of polybutylene terephthalate, polyethylene terephthalate, polytetramethylene terephthalate, and mixtures thereof.

Claim 63 (New). The molded workpiece of claim 60, wherein the thermoplastic material is oriented such that the at least one non-olefinic component has a concentration gradient throughout the workpiece and a concentration maximum proximate to the outwardly oriented surface of the workpiece.

Claim 64 (New). The molded workpiece of claim 61, wherein the olefinic component is selected from the group consisting of polypropylene, copolymers of polypropylene, and mixtures thereof.

Claim 65 (New). The molded workpiece of claim 61, wherein the compatibilizing agent is siloxane oil present at interfacial regions throughout the

workpiece, wherein the non-olefinic polymer component comprises polyamides, and wherein further the interfacial regions are characterized as having at least some polyamide polymer and at least some olefinic polymer in coordinated contact therewith.

Claim 66 (New). A method of preparing a polymeric composition suitable for use in molding processes, the method comprising the steps of:

Agitating an amount of a non-olefinic thermoplastic, the non-olefinic thermoplastic having a first elevated processing temperature, the agitation progressing for an interval and at a temperature sufficient to maintain the thermoplastic polyamide in an essentially molten state wherein the non-olefinic thermoplastic is at least one of thermoplastic polyamides, polyesters derived from ethylene glycol, and thermoplastic polycarbonates;

Adding an amount of thermoplastic polyolefin to the agitating non-olefinic thermoplastic, the amount of thermoplastic olefin added being greater than the amount of non-olefinic thermoplastic, wherein the polyolefin added is maintained at a temperature below the first elevated temperature and results in a temperature decrease to a second temperature, the second temperature sufficient to maintain the added polyolefin in a molten state;

Compounding molten non-olefinic thermoplastic and added thermoplastic polyolefin for an interval sufficient to accomplish random dispersion of discrete regions of non-olefinic thermoplastic in a thermoplastic polyolefin matrix;

Cooling the molten dispersion to a temperature below which solidification of the resulting thermoplastic compound occurs; and

Further comprising the step of adding at least one compatibilizing agent into the non-olefinic thermoplastic during the initial agitation stage, wherein the at least one compatibilizing agent is essentially non-reactive to the non-olefinic thermoplastic and polyolefin constituents while resident in the compounding vessel.

III. Restriction/Election Requirement

A restriction requirement has been imposed on the claims as filed, it being the examiner's position that claims 1-9, 13, 18-22, 31-36, and 38-52 are drawn to a patentably distinct invention from that of claims 10-12, 14-17, 23-30 and 37. Applicant hereby confirms the provisional election, made without traverse, to restrict this case to the invention of claims 10-12, 14-17, 23-30 and 37. The non-elected claims have been cancelled by this amendment.

The remaining claims of this application are further subject to an election requirement, it being the examiner's position that these claims are directed to a plurality of patentably distinct species comprising the various materials defining the non-olefinic polymers. In response, Applicant confirms its provisional election, made without traverse, to prosecute the non-olefinic polymer species comprising polyester. Applicant understands that, upon allowance of a generic claim, it will be entitled to consideration of the non-elected species.

IV. Double Patenting Rejection

The examiner imposes upon the elected claims a provisional “obviousness-type” double patenting rejection in view of Applicant’s prior-pending application Serial No. 09/921,773 (which case, Applicant notes, has since issued as U.S. Pat. No. 6,670,421 B1). Applicant disagrees with the basis for the rejection. Nevertheless, and with the understanding that such does not constitute an admission as to the propriety of the double-patenting rejection, *see Quad Environmental Technologies Corp. v. Union Sanitary District*, 20 USPQ2d 1392 (Fed. Cir. 1991), a terminal disclaimer will be filed.